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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,990	10/31/2003	Dan Meacham	AIELP008	8866

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VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
SHINGLETON, MICHAEL B	
ART UNIT	PAPER NUMBER
2815	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,990	MEACHAM, DAN	
	Examiner	Art Unit	
	Michael B. Shingleton	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Michael B Shingleton
Primary Examiner
Group Art Unit 2815

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-8 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically there is no support for using both the first and the second frequency to transmit information during the time the carrier frequency switches from one value to another, i.e. there is no support for an invention were both the first and second frequencies are on at the same time. Note that the present claim language is not the most clear language and accordingly this rejection is based on one interpretation of the claim language and the most reasonable interpretation of the claim language.

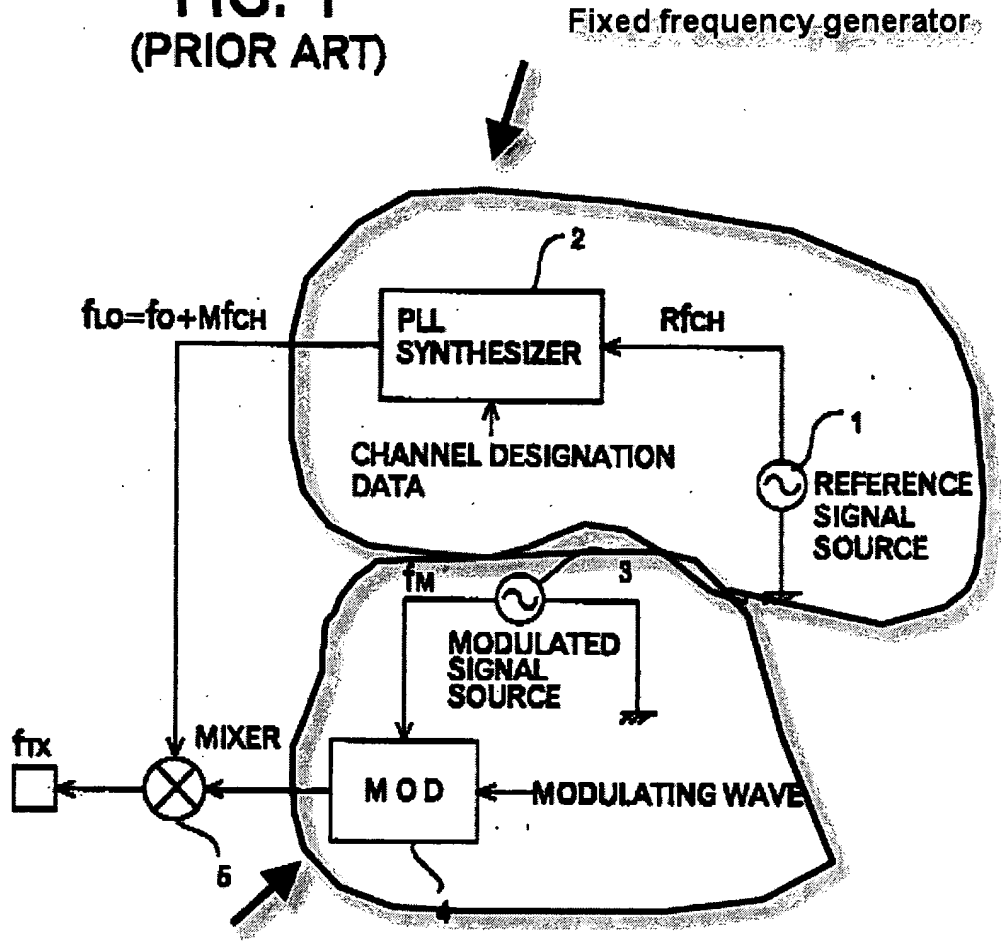
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uriya 5,408,201 (Uriya).

FIG. 1
(PRIOR ART)



Variable frequency generator, Note that the modulator 4 could be any conventional modullator such as a fsk modulator or a freqeuncy modulator. A fsk modulator certainly frequency hops between a first frequency and a second frequency and the time it takes to hop i.e. switch is a finite amount which would allow information to be exchanged should both the first and second frequencies are transmitted together.

Figure 1 of Uriya.

Figure 1 and the relevant text of Uriya discloses a frequency synthesizer having a fixed frequency generator formed by the PLL "2" and reference signal generator "1". (Note that when the frequency of elements "1" and "2" are selected, that this frequency generator generates a constant or fixed frequency. Also note that while this fixed frequency generator has an additional function to that disclosed by

applicant's disclosure in that the fixed frequency of Uriya is that is selectable i.e. different channels can be selected, the device "1" and "2" of Uriya may never change channels and thus would be the same fixed frequency generator as that meant by applicant.)

Figure 1 and the relevant text of Uriya also disclose a variable frequency generator in the form a modulator formed from elements "3" and "4". Uriya is not clear on the exact modulator used or employed. A FM modulator or an fsk modulator are well-known art-recognized equivalent modulators for a wireless device. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilized a FM modulator for Uriya because as the Uriya reference is silent on the exact structure of the modulator one of ordinary skill in the art would have been motivated to use any art-recognized equivalent modulator such as the FM or a fsk modulator.

As to the limitation that the variable signal is independent of the fixed frequency generator note the lack of any connection between these elements in Uriya. Only the outputs are combined like in applicant's disclosed invention. Also note the mixer 5 of Uriya combines the fixed frequency signal and the variable frequency signal to provide at least a first frequency and a second frequency. Also note that the carrier frequency switches or hops between these two frequencies, i.e. the invention made obvious above is in "the frequency hopping mode".

Applicant has amended the claims to recite: that "*the carrier frequency signal is associated with an ultra-wide band (UWB) system operating in frequency hopping mode...*" and *"the carrier frequency signal operates at the first frequency during a period of time, operates at the second frequency during a second period of time and switches between the first frequency and the second frequency in an amount of time sufficient to exchange information in the frequency hopping mode using both the first frequency and the second frequency"*.

As to the term "is associated", this term is very broad. The examiner has tried to point this out to the applicant previously. The claims now recite that "*the carrier frequency signal is associated with an ultra-wide band (UWB) system operating in frequency hopping mode...*". This simply does not say that the frequency synthesizer is part of a UWB system or is used in a UWB system (See claim 6 addressed below.). The claimed invention has to be read broadly and the claimed frequency synthesizer structure could be in the same room as a UWB system and therefore the signal carrier frequency transmitted from the frequency synthesizer would be "associated with" the UWB system. Also however, accordingly, as most of the claims are drawn to the structure of the frequency synthesizer and not the UWB system then what the UWB system does, what it is made of and how it operates has no bearing on the structure of the claimed frequency synthesizer, because the UWB system is **not** part of the structure of the frequency

synthesizer (See MPEP 2114). The carrier frequency signal of the frequency synthesizer is merely somehow "associated with" an UWB structure that may have many attributes. As pointed out previously and below the frequency synthesizer structure is "fully capable of being used in a UWB system", for example the device of Uriya could be used a modulation means.

With respect to the limitation of "using both" the first and the second frequency as reproduced above if applicant is setting forth merely an amount of time it takes to hop or switch then the claims just does not say much, i.e. the claims are very broad for all systems that switch frequencies i.e. hop require a finite amount of time. It is noted that applicant also just has not pointed out where support for this appears in the original disclosure. It is just not clear to the examiner what applicant may have meant for just like applicant's system when the first frequency is output this conveys information and then the frequency is switched to the second frequency this conveys information. The conveying of information is the exchange of information from the system made obvious above and some other location. This is how the disclosed invention operates and so the examiner is at a loss as to what applicant may have meant by this. For examining purposes the prior art is seen as anticipating this language. Also note that MPEP 2114 is very clear that in claims drawn to structure the patentable difference must be that of structure. In the elected invention of Figure 2A this invention shows block diagrams or so called 'black boxes". No specific structure is associated with these boxes or diagrams and therefore the structure contained therein is conventional. Uriya also shows the use of black boxes for these elements and as these are conventional as well these elements could be just as capable of frequency hopping just like that of applicant's invention. However in the interest of compact prosecution while Uriya is silent on the speed as which the frequency changes, the selection of the speed is merely part of the optimum or workable range which has been long held to involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the changing of the frequency of Uriya to be within the fast-hopping rate, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 2 the variable frequency generator has an output that is not connected back to the other components of the variable frequency generator (Note above the reference to Figure 1 that clearly shows this feature.).

With respect to claim 3, here the optimum or workable range is recited. Specifically, claim 3 recites that the variable frequency generator "settles" substantially faster than the fixed frequency

generator. There is no specific definition given for the term "settles" and the claims are silent on where it settles from. It could be when the power is first applied as compared to each frequency generator or it could be when the power is first applied to the fixed frequency generator as compared to the time it takes for the variable frequency generator to settle when a change in frequency occurs. How fast a frequency generator settles is the result of a result effective variable. For example it could be because of the selection of the value of the capacitance in the oscillator circuit that determines how fast or how slow the oscillator "settles". It is merely common sense that the variable frequency generator settles much more quickly than the fixed frequency generator for the variable frequency generator is to change frequency "quickly" in Uriya and the fixed frequency is to remain fixed. However, the selection of how fast an oscillator settles is merely the selection of the optimum or workable range that has been long held to only involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the variable frequency generator to settle faster than the fixed frequency generator, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 4, note the mixer referenced above.

With respect to claim 5, here a functional statement of intended use is recited. Applicant intended to utilize the frequency synthesizer in a transceiver. Uriya clearly utilizes the frequency synthesizer in a transmitter. However, it is well know (The examiner takes Official Notice.) to combine the functions of a receiver with a transmitter so as to make for a more compact overall structure a more reliable transmitting and receiving operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a receiver as part of the structure of Uriya as well so as to make for a more reliable and compact structure as is well
.known in the art.

With respect to claim 6 here again applicant recites a functional statement of intended use. Applicant intends to utilize the frequency synthesizer in an ultra-wide band system (UWB). As the structure of Uriya is fully capable of being used in a UWB system claim 6 does not present a patentable distinction over Uriya. Note that Uriya is silent on the bandwidth of the components that make up the device and the claim 6 does not recite where in a UWB system applicant intends to use the frequency synthesizer structure. The structure of Uriya could be utilized as a modulation means or as the main transmission structure itself. (See MPEP 2114, and 2111.02 and in particular note In re Schreiber, 128

F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir 1997)). In the interest of compact prosecution, the following interpretation is offered. The selection of the bandwidth of the system of Uriya is merely the selection of the optimum or workable range that has been long held to only involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the bandwidth of the system of Uriya to be that of UWB signal thereby making a UWB system, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 7, the modulator 4 is a fast switching component and the source 3 is a signal generator.

With respect to claim 8, the signal generator of Uriya clearly generates a plurality of signals, i.e. different frequencies. The fast switching component would the fsk or frequency modulator.

The structure made obvious above includes the recited and claimed method steps because these steps are a part of the functioning of the device. However, in the interest of insuring that the examiner's position is not misunderstood the following analysis is offered.

The device disclosed or made obvious above involving Uriya clearly includes the step of generating a fixed frequency (See fixed frequency generator noted above.) and the step generating a variable frequency signal (See variable frequency generator above.). Also as noted above that the fixed frequency signal is generated independently of the fixed frequency signal (Note Figure 1 of Uriya.). Uriya also includes the step of combining the fixed frequency signal and the variable frequency signal to provide the "frequency hopping mode". (Note the mixer.)

Response to Arguments

Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection. However, the examiner offers the following to help make clear the position of the office.

The claims of the previous amendment recited that "the carrier frequency signal switches from a first wireless channel to a second wireless channel and information is exchanged using the first wireless channel and the second wireless channel". The prior art clearly provides for this as noted previously for information is exchanged from the transmission system of Uriya to some other location at every wireless channel or frequency.

As the newly submitted claims are understood these claims presents new matter. Claim 1 for example now reads *"the carrier frequency signal operates at the first frequency during a period of time, operates at the second frequency during a second period of time and switches between the first frequency and the second frequency in an amount of time sufficient to exchange information in the frequency hopping mode using both the first frequency and the second frequency"*. The claim language is unclear for is the claim merely limited to solely an amount of time that happens to be any finite amount or is applicant setting forth that the first and second frequencies are being used at the same time to allow for information to be exchanged "using both the first frequency and the second frequency"?

If applicant is setting forth merely an amount of time then the claims just does not say much, i.e. the claims are very broad for all systems require a finite amount of time. It appears that a finite amount of time is all the claim is saying. Applicant also just has not pointed out where support for this appears in the original disclosure. Furthermore, there is no limiting, i.e. specific definition, of "frequency hopping mode" in the original disclosure. Accordingly, the examiner must give the broadest reasonable interpretation to the term. Thus the prior art of Uriya being a system that frequency hops, i.e. it changes frequency, would always be in a "frequency hopping mode". The "mode" is that of frequency hopping in Uriya. The time it takes to switch from one frequency to that of another there will always be of a finite value.

If applicant really meant for information to be exchanged "using both the first frequency and the second frequency" i.e. the system simultaneously transmits at the first and second frequencies then this clearly presents new matter. The system disclosed by the original disclosure is one where the frequency is switched not one that transmits simultaneously at two frequencies. There simply is no support for using both the first and the second frequency to transmit information during the time the carrier frequency switches from one value to another. Again applicant has not provided where in the original disclosure support for this amendment occurs and specifically where is the support that recites that both the first and second frequencies are on at the same time can be found.

As far as the prior art is concerned the examiner will read the claims broadly in that there is always an amount of time it takes to switch from one frequency to another in the prior art of Uriya. And accordingly this time being finite would be large enough in Uriya that if both frequencies were transmitted at the same time that information would be exchanged from the two frequencies to lets say a remote receiver. The examiner will read the claims as not requiring the device to transmit both the "first" and the "second" frequencies.

As to the term "is associated", this term is very broad. The examiner has tried to point this out to the applicant previously. The claims now recite that "*the carrier frequency signal is associated with an ultra-wide band (UWB) system operating in frequency hopping mode...*". This simply does not say that the frequency synthesizer is part of a UWB system or is used in a UWB system (See claim 6). The claimed invention has to be read broadly and the claimed frequency synthesizer structure could be in the same room as a UWB system and therefore the signal carrier frequency transmitted from the frequency synthesizer would be "associated with" the UWB system. Also however, accordingly, as most of the claims are drawn to the structure of the frequency synthesizer and not the UWB system then what the UWB system does, what it is made of and how it operates has no bearing on the structure of the claimed frequency synthesizer, because the UWB system is **not** part of the structure of the frequency synthesizer (See MPEP 2114). The carrier frequency *signal* of the frequency synthesizer is merely somehow "associated with" an UWB structure that may have many attributes. That is just so very broad. As pointed out previously the frequency synthesizer structure is "fully capable of being used in a UWB system", for example the device of Uriya could be used as modulation means. Claim 6 is merely a statement of intended use

If applicant wants to claim the combination of a UWB system that includes the frequency synthesizer then applicant should positively claim this combination. However, note that the elected invention is to the structure of the frequency synthesizer method of operating this synthesizer as applicant has elected Figure 2A. If applicant insists that the combination is claimed then it may be possible that a restriction by original presentation will be in order.

MPEP 2114 recites that:

"APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)"

An example of structurally distinguishing over the prior art would be the claimed invention to a circuit sets forth a static induction transistor whereas the prior art shows a bi-polar transistor structure for the circuit. Figure 2A of the elected invention shows black boxes for structure and so does the prior art

(See Figure 1 of Uriya). The invention made obvious provides for black boxes that provide for frequency hopping, i.e. the changing of frequency from one value to another. This is the same arrangement of black boxes as shown in Figure 2A of the instant invention. Thus the examiner really believes that real solid structure needs to be claimed in order to over come the rejection at hand.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker, can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS
April 1, 2007

Michael B Shingleton
Primary Examiner
Group Art Unit 2815